

U.S.S.N. 10/072,766

Filed: February 8, 2002

SUBSTITUTE AMENDMENT AND RESPONSE TO OFFICE ACTION

In the Claims

1. (currently amended) A method of treatment comprising locally penetrating and entering the body of

(a) penetrating and entering the endomural zone of an organ, organ component or tissue structure with a means for delivery of a therapeutic, prophylactic or diagnostic agent, and

(b) delivering the therapeutic, prophylactic or diagnostic agent to the endomural zone in a form for local delivery of an effective amount of the therapeutic, prophylactic or diagnostic agent to the endomural zone,

wherein the agent is delivered in a carrier selected from the group consisting of porous matrices, hydrogels, organogels, colloidal suspensions, microparticles and microcapsules, nanoparticles and combinations thereof

with minimal damage to obtain access to endomural zones of an organ.

Claim 2. (canceled)

3. (currently amended) The method of claim 2 1 wherein the therapeutic, agents are prophylactic or diagnostic agent is selected from the group consisting of drugs, and cells, polymers diagnostic or therapeutic devices.

4. (currently amended; withdrawn) The method of claim 3 1 wherein the agent is delivered in a polymer polymers are degradable or non-degradable.

Claim 5. (Canceled).

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6. (previously presented) The method of claim 3 wherein the drugs are selected from the group consisting of anti-infectives, antibiotics, antifungal, antihelminthic, antiparasitic agents, anticancer agents, anti-proliferative agents, anti-migratory agents, anti-inflammatory agents, metalloproteases, proteases, thrombolytic agents, fibrinolytic agents, steroids, hormones, vitamins, carbohydrates, lipids proteins, peptides and enzymes.

7. (currently amended) The method of claim 3 wherein the drugs are proliferative growth factors selected from the group consisting of platelet derived growth factor (PDGF), fibroblast growth factor (FGF), transforming growth factor (TGF), eye-derived growth factor (EDGF), Epidermal GF epidermal growth factor (EGF), nerve growth factor (NGF), insulin-like growth factor (ILGF), vascular endothelial growth factor (VEGF), Hepatocyte scatter factor, angiogenic growth factors, serum factors, collagen, laminin, tenascin, secreted protein acidic and rich in cysteine (SPARC), thrombospondin, fibronectin, vimentin and other matrix factors.

8. (withdrawn) The method of claim 3 wherein the cells are autogenous similar cells from adjacent normal zones of the same or different organs.

9. (withdrawn) The method of claim 3 wherein the cells are autogenous differing cells from adjacent normal zones of the same or different organs.

10. (currently amended; withdrawn) The method of claim 3 wherein the cells are therapeutic factors produced by or in the form of stem cells or other progenitor cells.

11. (withdrawn) The method of claim 3 wherein the cells are explanted and expanded *in vitro* for implantation.

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12. (currently amended; withdrawn) The method of claim 3 1 wherein the therapeutic factors are agent is selected from the group consisting of genes, plasmids, episomes, viruses, and viroids.

13. (currently amended) The method of claim 3 wherein the therapeutic factors are agent is selected from the group consisting of heat shock proteins, stress response proteins, and inducers of heat shock or stress response proteins.

14. (currently amended) The method of claim 1 further comprising, first forming a cavity, containment space or reservoir area in the endomural zone ~~and depositing therapeutic agents and systems in the cavity, containment space or reservoir.~~

15. (currently amended) A device comprising
a hollow tubular member with an end ~~penetrating or cutting means for creating a void,~~
~~causing wherein the means for creating a void is designed to cause minimal collateral damage to~~
~~tissue surrounding a site where a void is created,~~

and means for local delivery of a therapeutic, prophylactic or diagnostic agent into
the endomural tissue zone of an organ, organ component or tissue structure, wherein the agent is
delivered in a carrier selected from the group consisting of porous matrices, hydrogels,
organogels, colloidal suspensions, microparticles and microcapsules, nanoparticles and
combinations thereof.

16. (currently amended) The device of claim 15 wherein the member is rigid and
made of metal, polymer, or composite.

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17. (currently amended) The device of claim 15 wherein the member is a flexible and comprises a catheter-like tubular tissue accessing device.
18. (original) The device of claim 15 wherein the member is attached to a single or multiple reservoirs for therapeutic agent containment and delivery.
19. (currently amended) The device of claim 15 wherein the member has an expansile cutter at the distal an end of the member to create a tissue-space void.
20. (original) The device of claim 15 further comprising diagnostic or therapeutic sensors.
21. (original) The device of claim 15 further comprising projectile means to ballistically transfer particles through the ectoluminal or endoluminal zone for retention in the endomural zone.
22. (original) The device of claim 21 wherein the projectile means is selected from the group comprising mechanical acceleration, electrical transfer, spark explosion, and gas explosion.
23. (previously presented) The device of claim 15 further comprising means for indirect or direct guidance.
24. (currently amended) The device of claim 23 wherein the means for direct guidance is selected from the group consisting of fiber optic imaging systems, endoscopes, direct tip cameras, charge coupled devide (CCD), Complimentary Metal Oxide Semiconductor (C-

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MOS) or other chip or electrical video systems, and ultrasound or ~~GPS~~ global positioning systems (GPS).

25. (currently amended) A kit comprising
a device comprising
a hollow tubular member with an end ~~penetrating or cutting~~
~~means for creating a void, wherein the penetrating or cutting means causing wherein the~~
~~means for creating a void is designed to cause minimal collateral damage to tissue surrounding a~~
~~site where a void is created and~~
~~means for local delivery of therapeutic, prophylactic or diagnostic agents into the~~
~~endomural zone of an organ, organ component or tissue structure and~~
~~a void filling material or implant, wherein the void filling material or implant is in a form~~
~~suitable for local delivery.~~

26. (withdrawn) The kit of claim 25 wherein the void filling material or implant can locally sense, store or telemeter physical, chemical or biological information.

27. (withdrawn) The kit of claim 25 comprising electroactive or electroconductive polymers which may be directly or externally activated via transcutaneous energy delivery to elicit positive or negative galvanotaxis.

28. (previously presented) The kit of claim 25 further comprising a therapeutic for induction of angiogenesis or myogenesis.

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29. (previously presented) The kit of claim 28 wherein the therapeutic is selected from the group of angiogenic growth factors, inflammatory angiogenic polymers or polymer constructs, and electroactive or other microinjurious or locally stimulatory polymers.

30. (withdrawn) The kit of claim 28 wherein the therapeutic comprises cells selected from the group consisting of endothelial cells, EC bone marrow precursor cells, other stems cells smooth muscle cells or precursors, combinations, neural cells or neural stem cells or combinations thereof.

31. (previously presented) The device of claim 15, wherein the device is suitable for nerve regeneration.

32. (withdrawn) The kit of claim 25 comprising a bioactive polymer.

33. (previously presented) The kit of claim 25 further comprising stress response inducing agents or stress response proteins.

34. (New) The method of claim 14, further comprising depositing the therapeutic, prophylactic or diagnostic agent in the cavity, containment space or reservoir.

35. (New) The method of claim 1, wherein the organ, organ component or tissue structure is accessed percutaneously, surgically, or via endoluminal entry.

36. (New) The method of claim 1 wherein the means for delivery of a therapeutic, prophylactic or diagnostic agent is a tubular device.

37. (New) The method of claim 1, wherein the tubular device is selected from the group consisting of catheters, syringes and spray devices.